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W. Larson  
7/2/99

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUN 28 1999 APPLICANT:

Salvador L. Arias et al.

SERIAL NO.:

08/994,531

GROUP ART UNIT: 2711

FILED:

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EXAMINER:

C. Grant

FOR: ASYMMETRICAL DATA  
COMMUNICATION SYSTEM

ATTORNEY DOCKET NO.: BS116/172908

Assistant Commissioner for  
Patents  
Washington, D.C. 20231

I hereby certify that this correspondence is being deposited with the  
United States Postal Service as certified first class mail in an envelope  
addressed to: Assistant Commissioner for Patents, Washington, D.C.  
20231, on June 24, 1999.

*Janie Wilkins*

**DECLARATION UNDER 37 CFR § 1.131(a)**

Sir:

I, Richard Sammis Bergen, Jr., an applicant in the above-identified patent application, declare as follows:

1. I worked on the subject matter of the above-identified application ("the Invention") on behalf of BellSouth Corporation ("BellSouth").
2. Prior to March 16, 1995, BellSouth had performed propagation testing and system level testing of Local Multipoint Distribution Service (LMDS).
3. Exhibit 1 shows a test point overlay with 126 points that were generated using a statistically random distribution. The test point overlay shown in Exhibit 1 was placed on maps in regions being tested to locate 126 test points. The test points are those points at which propagation measurements were intended to be taken.

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4. A diagram of LMDS field test equipment is shown in Exhibit 2. The LMDS field test equipment includes a node or cell site and Customer Premise Equipment (CPE). The node shown in this diagram performed one-way FM video broadcast or simultaneous one-way digital video broadcast and bi-directional telephony via a T-1 line. The CPE was capable of FM video reception or simultaneous digital video reception and bi-directional telephony. The testing with the equipment shown in Exhibit 2 occurred prior to March 16, 1995.

5. A diagram of the architecture for LMDS station equipment is shown in Exhibit 3. The LMDS station equipment architecture shown in Exhibit 3 was used in testing the node part of LMDS and this testing occurred prior to March 16, 1995. As shown in this diagram, the node included a multi-media multiplexer connected to a plurality of sources, such as MPEG-1, MPEG-2, and JPEG Encoder. The node also included a QPSK modulator having an input connected to the multi-media multiplexer and having an output connected to an RF transmitter ("RF XMIT").

6. A diagram of the architecture for LMDS CPE station equipment is shown in Exhibit 4. The LMDS CPE station equipment architecture shown in Exhibit 4 was used in testing the CPE part of LMDS and this testing occurred prior to March 16, 1995. As shown in this diagram, the LMDS CPE station equipment included a QPSK demodulator for receiving signals from an RF receiver ("RF RCVR"). Data from the QPSK demodulator was supplied to a multi-media demultiplexer which then forwarded data to a JPEG decoder and to

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a PC which provided MPEG video and audio to a picture-in-picture (PIP) television. An output from the multi-media demultiplexer is represented as a two-way T1 line that was routed to a fax machine, a PC, and to a Plain Old Telephone Services ("POTS") telephone.

7. Exhibit 5 is a photograph of an LMDS fixed node transceiver used in the testing that occurred prior to March 16, 1995.

8. Exhibit 6 is a photograph of an LMDS CPE transceiver used in the testing that occurred prior to March 16, 1995.

9. Results of testing that was performed prior to March 16, 1995, confirmed (1) FM video downstream; (2) Digital video downstream with either JPEG real time encoding at 20 Mbps or pre-recorded MPEG-1 video at 1.544 Mbps with full menu control over an upstream channel; (3) switched telephony and Fax services over D4 channel banks (T1 line and multiple CPE POTS lines); and (4) Interactive games and data transfer at 512 Kbps.

10. Exhibit 7 is a summary of measured and computed data gathered during testing that occurred prior to March 16, 1995.

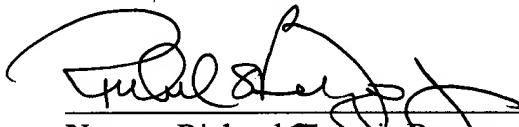
11. Results of testing that was performed prior to March 16, 1995, confirmed (1) T1 telephony; (2) video transmission (both JPEG and MPEG); (3) simultaneous execution of telephony operations (voice and data transmission, LAN bridging) and video transmission; and (4) line-of-site transmission at 16 or more kilometers.

12. Exhibit 8 is a summary of baseline tests that were conducted prior to March 16, 1995, on the data gathered during testing.

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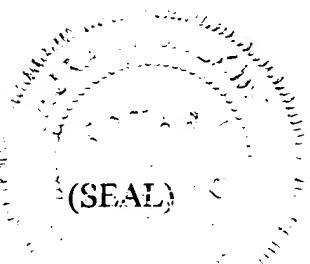
13. As the person signing below, I hereby declare that all statements made herein of my own knowledge is true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, or any patent issued thereon.

Dated: 6/23/99

  
\_\_\_\_\_  
**Name:** Richard Sammis Bergen, Jr.  
**Citizenship:** United States  
**Residence:** Roswell, Georgia  
**Post Office Address:** 2875 LAUREL GREEN G  
Roswell, GA 30076

STATE OF GEORGIA      )  
                              ) ss.  
COUNTY OF FULTON      )

On this 23 day of June, 1999, before me, a notary public, came Richard Sammis Bergen, to me known and known to be the individual described in and who executed the foregoing assignment, and she duly acknowledged the same to be his free act and deed.

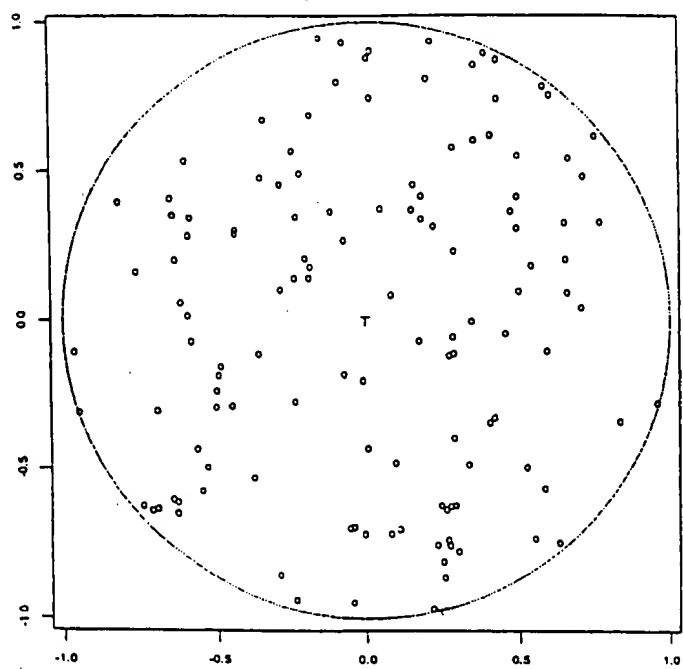


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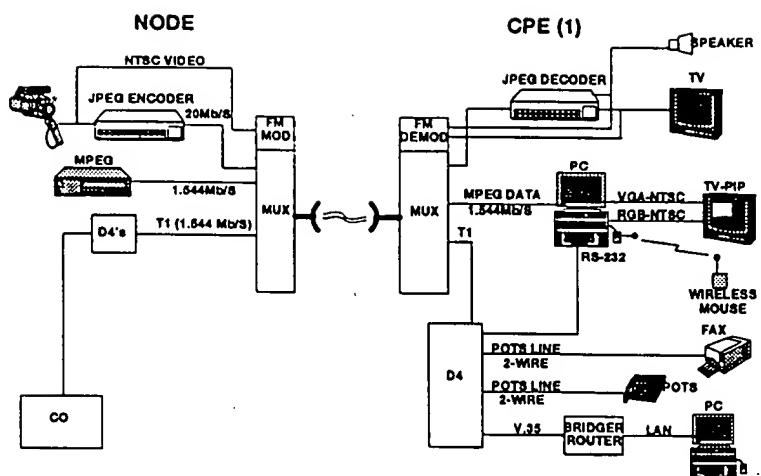
  
\_\_\_\_\_  
Notary Public

My Commission expires:

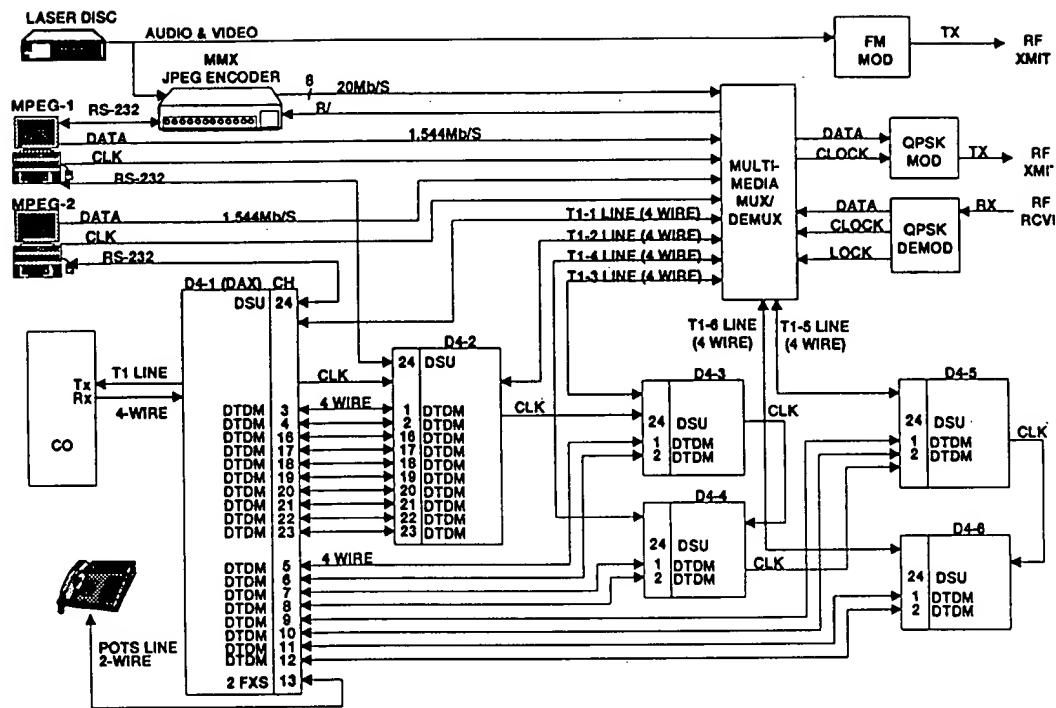
Notary Public, Gwinnett County, Georgia  
My Commission Expires Mar. 25, 2001



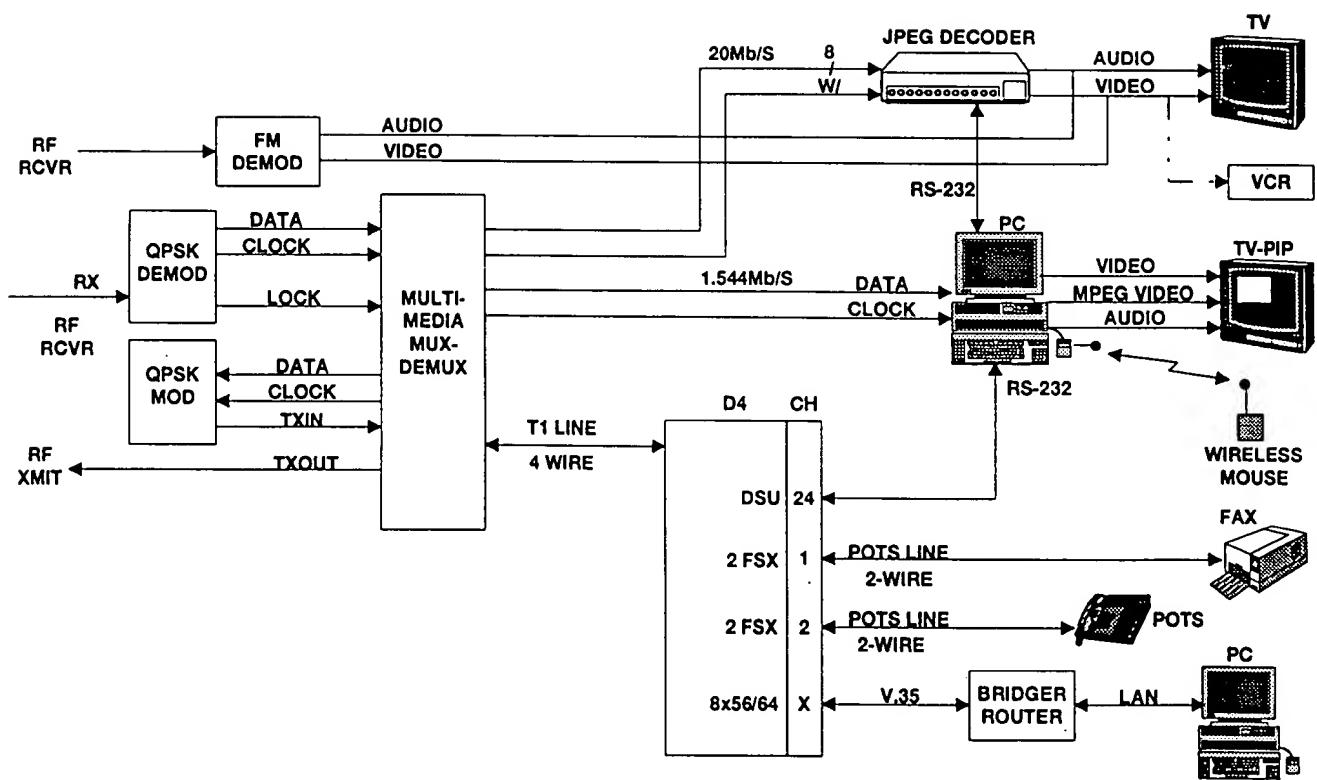
## EXHIBIT 1



## EXHIBIT 2



## EXHIBIT 3



## EXHIBIT 4



## EXHIBIT 5



**EXHIBIT 6**

**Table C1. Summary of System Test Data**

Range (km)	Foliage Cond.	FM C/N (dB)	FM S/N (dB)	FM Fade (dB)	Digital C/N (dB)	Digital Fade (dB)	QPSK BER	T1 BER
1	CLOS	34.2	48.9	28.0	12.0	23.0	<1E-11	<1E-10
1	CLOS	34.3	**	**	26.1	**	<1E-11	**
1	CLOS	29.5	**	**	24.4	21.0	<1E-11	**
1	1 Tree	16.9	46.5	13.0	8.5	0.0	<1E-11	**
1	1 Tree	-14.3	---	---	2.8	---	---	---
3	CLOS	30.6	48.8	10.0	16.6	7.0	1.29E-10	<1E-10
3	1 Tree	2.4	---	0.0	1.8	0.0	---	---
3	2 Trees	5.5	---	0.0	-4.9	---	---	---
5	CLOS	31.4	48.7	20.0	22.3	7.0	<1E-11	<1E-10
5	1 Tree	-16.0	---	0.0	-23.0	0.0	**	**
7	CLOS	28.1	47.6	15.0	21.1	3.0	1.29E-10	<1E-10

## EXHIBIT 7

**Table C10. Baseline Tests Performed**

<b>Distance from Node (km)</b>	<b>FM C/N (dB)</b>	<b>Digital C/N (dB)</b>	<b>FM S/N (dB)</b>	<b>FM Fade Margin (dB)</b>	<b>Digital Fade Margin (dB)</b>
1	45	49	52	28	34
1	44.5	---	47	---	---
1	---	---	46	---	---
3	39	33.2	46.2	32	37
3	37	34	49	---	---
3	39	37	50	---	---
3	42	---	56	---	---
5	26	---	42	---	---
8	32.8	26.2	48.3	13	21
16	23.5	17.4	45.3	4	11

**Note:** "—" indicates that the data was not collected.

## **EXHIBIT 8**